

102

# JOURNAL OF PLASMA PHYSICS

VOLUME 3

1969

CAMBRIDGE

AT THE UNIVERSITY PRESS

1969

PUBLISHED BY  
THE SYNDICS OF THE CAMBRIDGE UNIVERSITY PRESS

Bentley House, 200 Euston Road, London, N.W. 1  
American Branch: 32 East 57th Street, New York, N.Y. 10022

*Printed in Great Britain at the University Printing House, Cambridge*

# CONTENTS TO VOLUME 3

## PART 1 FEBRUARY 1969

Shock-like solutions of the electrostatic Vlasov equation. D. MONTGOMERY and G. JOYCE	page 1
Landau damping of long wavelength ion acoustic waves in a collision-free plasma with a gravity field. D. PARKINSON and K. SCHINDLER	13
A variational approach to the dynamic stability of high-density plasmas in magnetic containment devices. D. R. WELLS and J. NORWOOD	21
Longitudinal oscillations of a plasma having a Fermi distribution of electrons. M. GIBBONS	47
Small amplitude waves in high $\beta$ plasmas. V. FORMISANO and C. F. KENNEL	55
A 337 $\mu\text{m}$ CW maser interferometer for plasma diagnostics. J. CHAMBERLAIN, H. A. GEBBIE, A. GEORGE and J. D. E. BEYNON	75
Magnetohydrodynamic shock waves in non-aligned flow. S. MORIOKA and J. R. SPREITER	81
On the kinetic equation for resonant three-wave coupling. R. C. DAVIDSON and A. N. KAUFMAN	97
A modified truncation procedure for the BBGKY hierarchy. C. J. MYERSCOUGH	107
On the kinetic theory of stable and weakly unstable plasma. Part 2. A. REGISTER and C. OBERMAN	119
REVIEW <i>The Statistical Theory of Non-Equilibrium Processes in a Plasma, by Yu. L. Klimontovich</i>	148

## PART 2 MAY 1969

Diocotron instability in presence of a cold plasma. ALDO NOCENTINI	149
Kinetic theory of the stability of collisional plasma in curved magnetic field. K. JUNGWIRTH	155
Measurement of the electrical properties of a flowing plasma, including a critical comparison of probe experiment and theory. E. W. BILLINGTON	161
Transformation of waves and electron heating in a radially inhomogeneous plasma. V. KOPECKÝ, J. PREINHAELTER and J. VÁCLAVÍK	179

Ion density and current distributions in a propagating current sheet, determined by microwave reflection technique. W. R. ELLIS and R. G. JAHN	page 18
Non-linear coupling of waves in a magnetized plasma with particle drift motions. H. WILHELMSSON	21
The growth and decay of resonant plasma oscillations excited by a small pulsed dipole. J. A. FEJER and WAI-MAO YU	22
More uniform perturbation theory of the Vlasov equation. G. J. LEWAK	24
Motion of a charged particle in superposed Heliotron and biconical cusp fields. M. P. SRIVASTAVA and P. K. BHAT	25
A new method of determining the transport coefficients for high pressure arcs from experimental data. L. B. KAPP and P. H. RICHARDS	26
Transverse instabilities in a collisionless plasma. A. SMITH	28
A quantitative quasi-linear analysis of waves in an anisotropic plasma. A. SMITH	29
REVIEW	
<i>Theory of Condenser Matter</i>	31

## PART 3 SEPTEMBER 1969

On the structure of the boundary layer separating a neutral anisotropic plasma from a magnetic field. L. G. COHEN and I. M. COHEN	31
A guiding centre Vlasov equation and its application to Alfvén waves. J. A. FEJER and J. R. KAN	33
Theory of a thick dynamic positive-ion sheath. K. F. SANDER	35
A sensitive microwave interferometer for plasma diagnostics. J. R. WALLINGTON and J. D. E. BEYNON	37
Stochastic solution of the Boltzmann equation for thermal electrons in an attractive Coulombic potential. M. J. BELL and M. D. KOSTIN	37
Theoretical models for resonance oscillations of inhomogeneous plasmas. G. DORMAN	38
On the asymptotic stability of monotonic electrostatic collisionless shock waves. D. BISKAMP	41
Dispersion of inhomogeneous plasma streams. P. B. BURT	41
The effect of weak collisions on ion-acoustic wave instabilities in a current-carrying plasma. R. S. B. ONG and M. Y. YU.	42
On the structure of collisionless magneto-plasma shock waves at super-critical Alfvén-Mach numbers. L. C. WOODS	43



MHD Rankine-Hugoniot equations applied to earth's bow shock. J. D. MIHALOV, C. P. SONNETT and J. H. WOLFE	page 449
On the modification of the Bernstein modes by electron-electron collisions S. R. WATSON and R. D. HARDING	465
Possibility of three waves coupling. A. M. POINTU, Y. POMEAU and A. CONSTANTIN	473
Higher order resonances in a plasma. G. J. LEWAK and C. S. CHEN	481
Statistical mechanics of a weakly turbulent stable plasma. E. ASSEO, G. BERTHOMIEU, J. HEYVAERTS and A. MANGENEY	499

PART 4 DECEMBER 1969

A collisionless shock in a plasma which is almost stable. A. SMITH	525
Drift waves in a slightly non-neutral plasma. A. NOCENTINI	543
On the influence of a radial electric field on the stability of a magnetically confined plasma. A. NOCENTINI	559
Stability of non-linear plasma waves. G. ROWLANDS	567
Non-linear transverse waves in a Vlasov plasma. S. P. GARY	577
Small amplitude transverse wave propagation in a weakly Langmuir turbulent plasma. N. BEL and J. HEYVAERTS	593
Saturation and camping of collisionless plasma wave echoes. J. COSTE and J. PEYRAUD	603
Hot plasma theory of whistler mode wave packet propagation along a non-uniform magnetic field. M. J. HOUGHTON	611
On the Rayleigh-Taylor instability in hydromagnetics with finite electrical resistivity and Hall current. S. SINGH and J. N. TANDON	633
The two stream instability in the 'resonance' model. E. INFELD and A. SKORUPSKI	643
The interface of a uniform plasma enveloped by the magnetic field of a system of line currents. C. SOZOU	651
Relativistic effects on non-linear waves in a cold collisionless plasma. Y. INOUE	661
On the structure of collisionless waves. J. B. FEDELE	673
Norman modes of oscillation in a higher-order Chew-Goldberger-Low plasma. A. E. SISSON and C. P. YU	691
REVIEW <i>Theory of Plasma Turbulence, by A. A. Vedenov</i>	709
INDEX TO VOLUME 3	711

